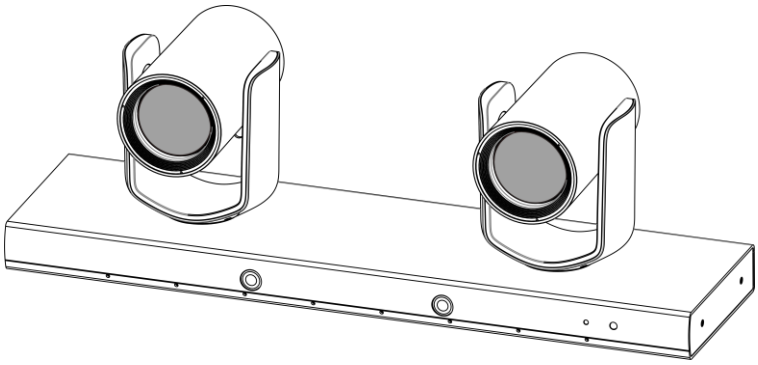
Speakers Tracking Camera

Quick Start Guide

User Manual V1.0



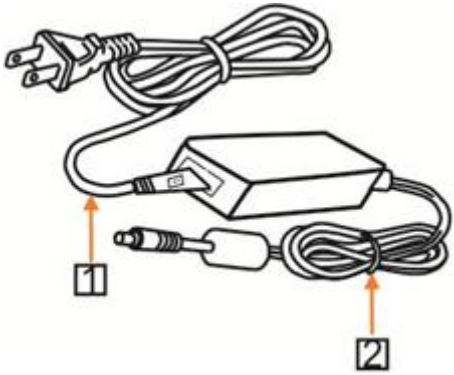
SAFETY NOTES -IMPORTANT

The following important notes must be followed carefully to run the camera and respective accessories in total safety. The camera and relative accessories are called video system in this section.

- Before installing the camera, please read this manual carefully. Please follow installation instructions indicated in this manual during installation. Please keep this manual for future use.
- The installation should be performed by qualified service personnel or system installers in accordance with all local rules.
- Before powering on the camera, please check the power voltage carefully. Make sure that you are using the correct power source.
- Please put the power cable, video cable and control cable in safe place.
- Do not operate the camera beyond the specified temperature and humidity. Working temperature range of the camera is between 0℃ and +40℃. The ambient humidity range is less than 90 %.
- During transporting, avoid violent shake or force to the camera.
- To prevent electric shock, do not remove screws or housing of the camera. There are no self-serviceable parts inside. Refer to qualified service personnel for servicing.
- Video cable and RS232 cable should be kept far away from other cables. Shielded and independent wiring is necessary for video and control cables.
- Never aim the lens of the camera at the sun or other extremely bright objects. Otherwise, it may cause damage.
- When cleaning the camera, please use soft cloth. If the camera is very dirty, wipe it off gently with a soft cloth moistened with a weak solution of water and a neutral kitchen detergent. Wring all liquid from the cloth before wiping the camera, then wipe off all remaining dirt with a soft, dry cloth. Use lens cleaning paper to clean the lens.

Do not move the camera head manually. In doing so would result in malfunction of the camera. Do not hold the camera head when carrying the video camera.

- This camera is for indoor use only. It is not designed for outdoor use.
- Make sure the camera is not directly exposed to rain and water.
- Make sure the camera is far away from area where radiation, X-rays, strong electric waves, or magnetism is generated.



⚠Warnings

1. If you need to extend the power cable, please extend the power cable from the part on above below picture (220V/110V), do not extend from part 1 on above picture (DC12V), otherwise it will cause unexpected damage to the device.
2. To prevent infringement of the rights of others, please confirm that it is installed and used within the scope permitted by local law!

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ABOUT THE PRODUCT

Quick Guide

The camera can be accessed and controlled via the following ways:

- Client software iSmartCMS: tracking setting, camera search and control, network setting.
- VLC: watch the camera four streams;
- IE: camera image preview, camera control, network setting;
- SDK: provide secondary development kits for the connecting and controlling of camera;
- Onvif: version 2.1 supported

  Name: admin

  Initial password: 123456
- Network pass-through: recommended connection mode with recording or streaming device.

ISmartCMS

Refer to detailed instructions in page 14 of this user manual.

Rtsp

1 Make sure PC and the camera are in the same LAN.

2 Three channel stream url: rtsp://IP/chx, x=1, 2, 3. 1 & 3 stream tracking camera image, 2 stream full view camera image.

3 IP address is acquirable through iSmartCMS, default rtsp port is 554.

IE

1 Make sure PC and the camera are in the same LAN;

3 Input IP address+ port number 88 (port numbers fixed to 88) in the IE address bar:

http://IP:88, such as http://192.168.1.180:88

3 Install plug-in;

4 Name: admin Initial password: Null;

5 Support Windows 7 or above operation system, whereas Windows XP is not supported.

SDK

Disk comes with camera includes:
SDK_Demo: SDK development sequence;
SDK_Doc: instruction of SDK connection;
SDK_Lib: SDK Library. SDK only provides image acquiring, PTZ controlling and etc, tracking configuration is not included.

Network Pass-Through

On the tracking parameters setting page, the IP address, port and connection protocol (TCP/UDP) of the recording or streaming

device can be configured. After connected, the camera can be controlled by the standard VISCA protocol. Recording or streaming device can achieve audio & video of the camera through rtsp or rtmp.

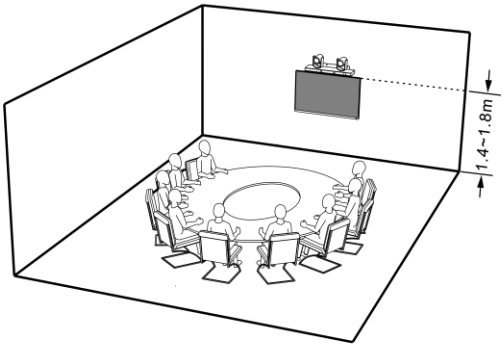
FEATURES

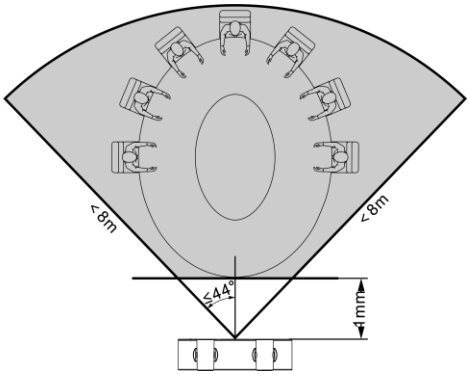
The speakers tracking camera helps to achieve intelligent meeting experience, implemented with both audio positioning and intelligent video analysis technologies. It can automatically switch between tracking view and full-view view to frame the speaker(s). It frees of camera operation during a meeting and enables meeting attendees to focus more on discussion.

Characteristics & Functions

- 1/2.8″ Exmor CMOS,2MP;
- 12x optical zoom, up to 72.5° Fov;
- Simultaneously output 3G-SDI,HDMI, Ethernet, Up to 1080p60 resolution;
- Support H.264/H.265 video compression;
- Implemented with both audio positioning, body detection and recognition technologies. It can precisely frame the speakers;
- Automatically switch between close-up image for speaker(s) and wide-angle image for all attendees;
- Built-in image switch rules according to actual meeting scenes.

Application Scenarios

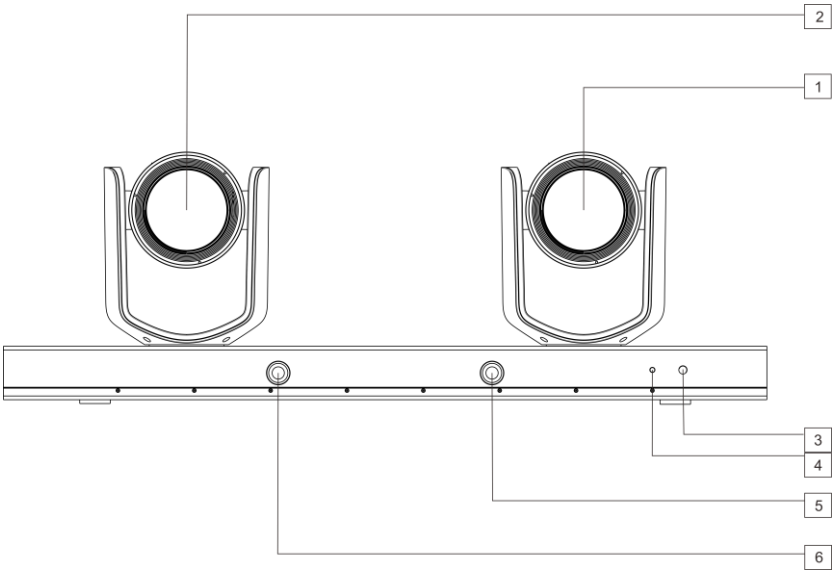




Main Parts & Interfaces

Camera

Front View



1 Camera 1 (Default Address 1)

2 Camera 2 (Default Address 2)

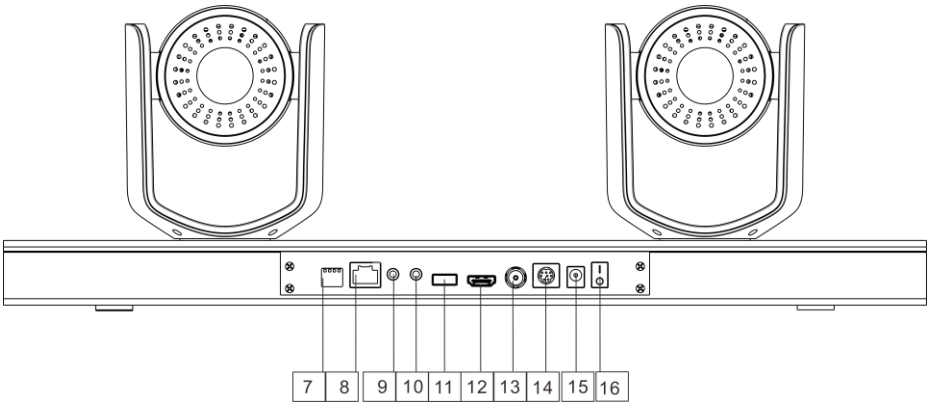
3 IR Indicator

4 Power Indicator

5 Full View Camera 1

6 Full View Camera 2

Rear View



7 DIP Switch

8 Ethernet

9 Ref Audio

10 Line In

11 USB (Reserved)

12 HDMI

13 HD-SDI

14 RS-232

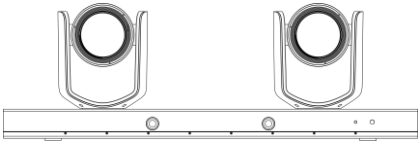
15 Power(DC12V)

16 On/Off

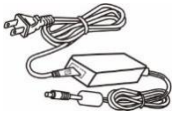
List Of Parts & Accessories

When you open the box, check all accessories according to the packing list.

Camera (1)



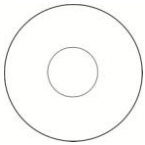
Power Adapter (1)



Remote Controller (1)

RS-232 Control Cable (1)

Software Disc (1)



INSTALLATION

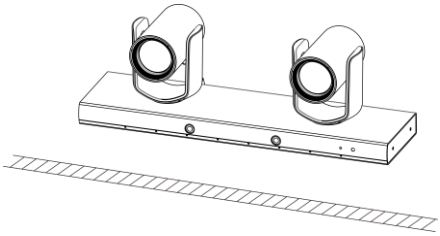
The camera has 2 installation types: desktop, wall (optional) installations.

🕮Note

- Before installing, make sure there is enough space to install the camera and its parts.
- Make sure the installed place is strong and safe enough to hold the camera and relative parts, it is suggested that the installed place can withstand 4 times the weight of the camera and its relative parts.

Desktop Mount Installation

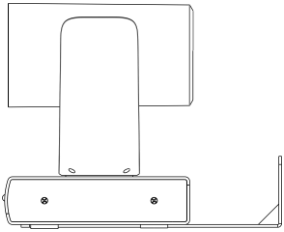
1. Put the camera on a flat surface. In case the camera has to be placed on an inclined surface, make sure the cline angle is less than 15 degrees to ensure proper pan /tilt operation.



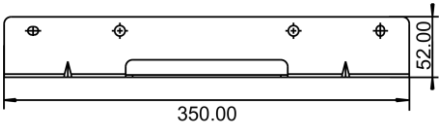
Note

- Take effective measures to avoid camera from dropping.
- Do not grab the camera head when carrying.
- Do not rotate the camera head with hand. It may cause malfunction to the camera.

Wall Mount Installation

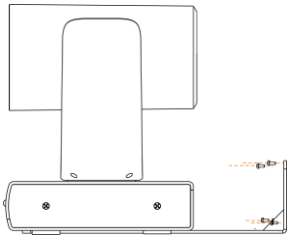


1. According to diameter and position of the 4 installation holes (As shown below) on the bracket, drill 4 holes on the wall and fix the bracket onto the wall by using 4 screws which should be prepared by you.



2. Before fixing the camera, set the DIP switches of the camera correctly.

3. Use inch screws to fix the camera on the bracket, fix the limit screw according to actual requirement, and make sure the camera is tightly fixed onto the bracket before your hands leave the camera.



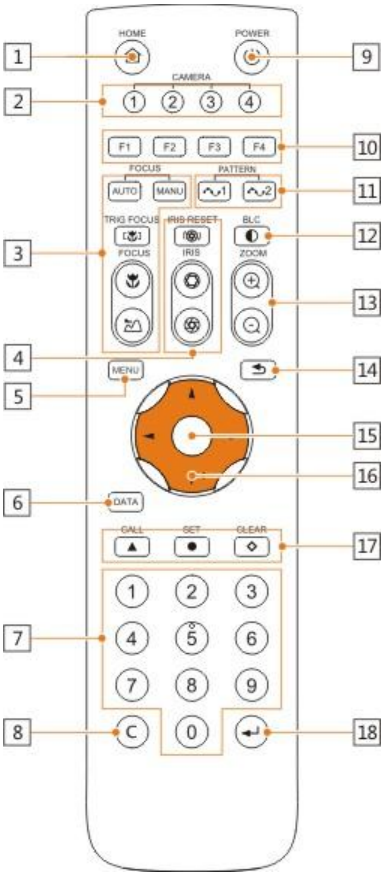
DIP Switches Settings

Before installing and operating the camera, set the camera video output format through DIP switches.

SW					
DIP No.	1	2	3	4	
Video Format	OFF	OFF	OFF	OFF	1080p60
	ON	OFF	OFF	OFF	1080pP5
	OFF	ON	OFF	OFF	1080i60
	ON	ON	OFF	OFF	1080i50
	OFF	OFF	ON	OFF	720p60
	ON	OFF	ON	OFF	720p50
	OFF	ON	ON	OFF	1080p30
	ON	ON	ON	OFF	1080p25

When No.1~4 is all ON, camera video format can be programmed by OSD menu. Please refer to page37.

Remote Controller



1 HOME

Press HOME button, camera moves to initial position where both pan and tilt angle is zero.

2 Camera Selection Button

Used to switch among 4 cameras, press 1-4 number buttons to control cameras with 1-4 addresses respectively. For example, press

button 1 to control the camera with address 1.

3 Focus

Press “AUTO” button to switch to Auto Focus, press “MANU” button to switch to Manual Focus mode.

“”button to Focus Near

“”button to Focus Far

“”button to Auto Focus once every time it is pressed, then switch back to Manual Focus mode.

4 Iris

Press“”button to reset iris value to default. “”button to Iris Open

“”button to Iris Close.

5 Menu

Press MENU button to enter / exit menu.

6 Data

The button is reserved for future use.

7 Number Keys

Used to input numbers, for example, preset number.

8 Cancel

The button is reserved for future use.

9 Power

After the camera has been connected to power source, in none-menu status, press this button to turn on / off the camera.

10 Reserved buttons (F1, F2, F3, F4)

Press the "F1" button, start the trace, press the "F2" button, stop tracking, press the "F3" button, SDI/HDMI output scene switch, "F4" button for the retention button, no function.

11 Pattern

The button is reserved for future use.

12 BLC

Used to open / close back light compensation.

13 Zoom

Used to adjust zooming times.

“”button to zoom in

“”button to zoom out.

14 Back

Press“” ”button to go back to previous menu.

15 OK

In None-menu status: press this button to switch among pan / tilt control speeds.

In Menu status: get into relative menu option after it has been selected.

16 Direction / Menu Operation

In None-menu status, press these four buttons to pan left/right and tilt up/down.

In Menu status: ▲ or ▼ button to select among menu options, ◄ or ► to change option / value.

17 Preset Setting

"▲" button to call a preset.

Input number key(s), and then press this button to call a preset.

"●"button to set a preset.

Move the camera to a specific position, adjust focus value and etc, and then press this button to set a preset.

"◇"button to clear a preset.

Input number key(s), and then press this button to clear a preset.

18 Enter

The button is reserved for future use.

SETTING

Software Connection

Take out Disc from the camera package, install "iSmart CMS" from the disc on your PC, turn on "iSmart CMS" , connect and add camera to the management device list, and enter into the main interface. Select one of a camera to do the following settings:

Tracking Settings

Start: Turn on tracking, use controller or software to call preset 80 can also turn on tracking.

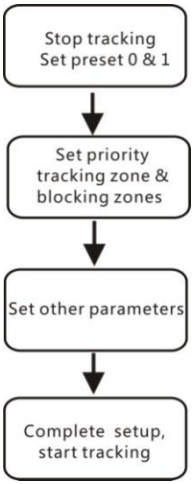
Stop: Turn off tracking, use controller or software to call preset 81 can also turn off tracking.

Settings: Click this button to get into detailed tracking parameters for configuration.

Once this button is clicked, main stream will automatically switch from tracking camera to full view camera. Once configuration is completed, main stream will return to tracking camera again.

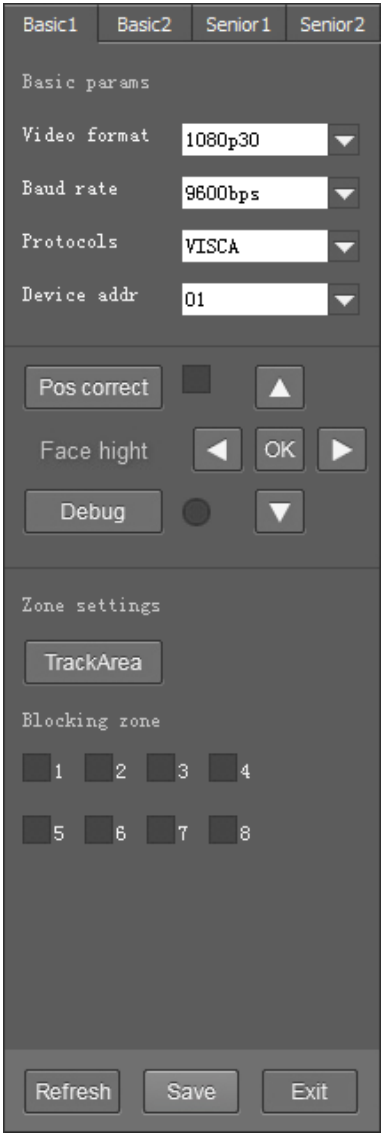
PARAMETERS SETTING

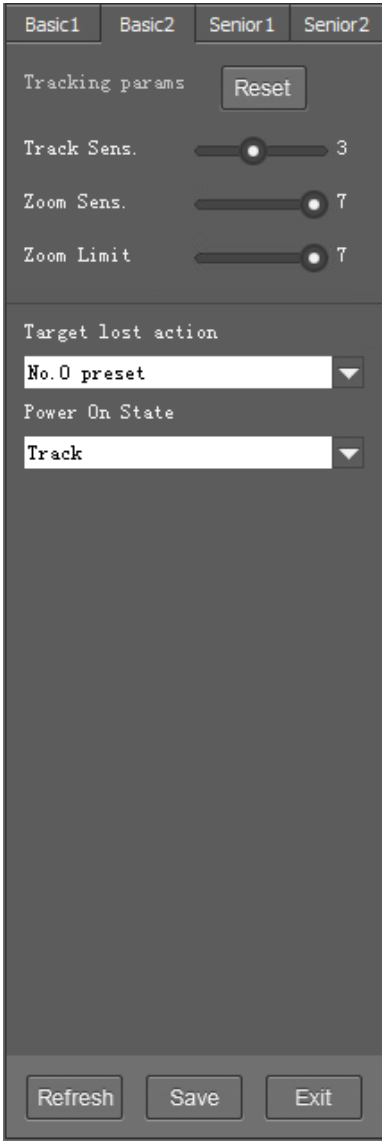
Setting Process

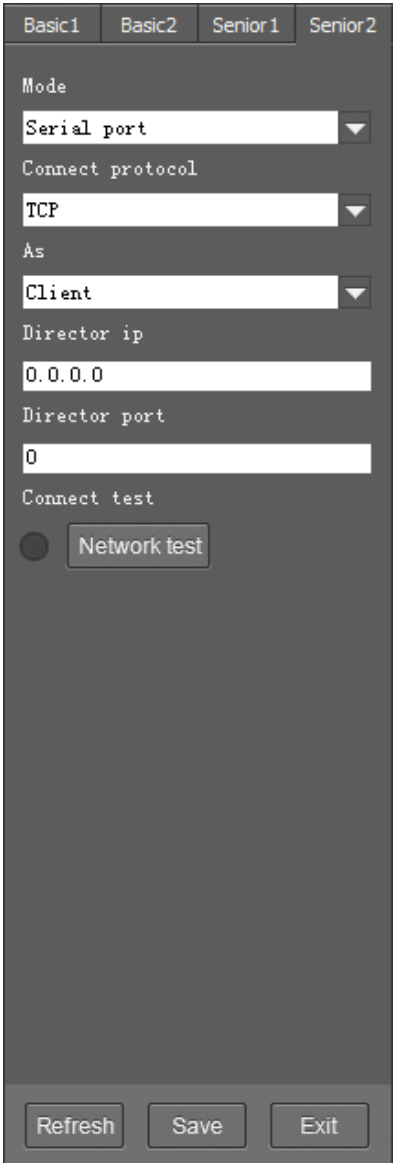


Preset 0 and Preset 1 are set as presets of full view image, or as presets of any zoom or position. When there is no target, camera will return to preset 0 or preset 1. Please refer to Basic Setting.

Parameter Setting




Basic1
Basic2
Senior1
Senior2
Tracking params
Reset
Track Sens.
3
Zoom Sens.
7
Zoom Limit
7
Target lost action
No.0 preset
Power On State
Track
Refresh
Save
Exit


Basic1
Basic2
Senior1
Senior2
Mode
Serial port
Connect protocol
TCP
As
Client
Director ip
0.0.0.0
Director port
0
Connect test
Network test
Refresh
Save
Exit

Basic Parameters Setting

The factory default setting of the camera is 1 (address), 9600bps, VISCA protocol, 1080p30 resolution for tracking camera and full view camera.

Position Calibration

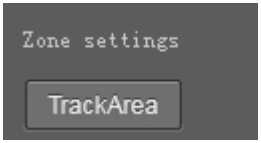
Adjust object's position in the video when he/she is not in the center of image.

Note: The position has been adjusted to the best value before leaving the factory, do not change it until it is necessary.

Debug

Enable and disable the rectangles of full view camera, showing been detected targets.

Zone Settings

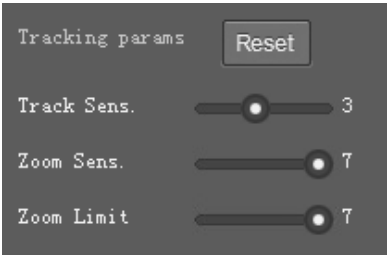


The tracking zone and blocking zones (up, bottom, left and right limits) have to be set. The tracking zone is an area where the targets are.

Track Area: The area that meeting attendees will move within.

Blocking zones: There are 8 blocking zones shown in green rectangle, they can be configured independently. The moving objects inside the blocking zones of the full view camera will not be detected and tracked while the tracking camera still tracks the lecturer.

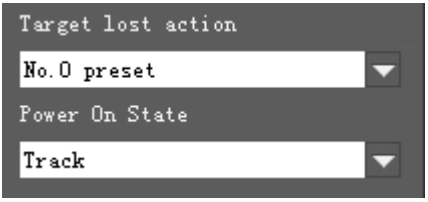
Tracking Params



Tracking Sens: Set sensitivity of tracking enable to detect and track. High sensitivity easily, and not lose the object.

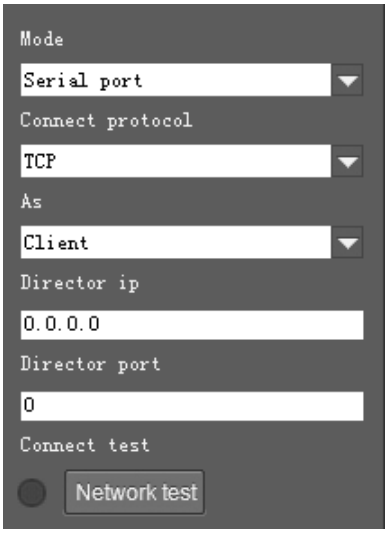
Zoom Sens: It defines how big the movement range will trigger camera to PTZ to frame after object is tracked.

Zoom Limit: Higher value enables higher zoom times of the object in the image.



Target Lost Action: Used to define the action to be performed if the camera loses the tracked object for a period of time.

Power On State: The action to be performed when the camera is powered on.



(Code Send) Mode: Choose to send codes via network or serial port;

Connect Protocol: Once “Network” is chosen as “Mode”, choose TCP or UDP as communication protocol.

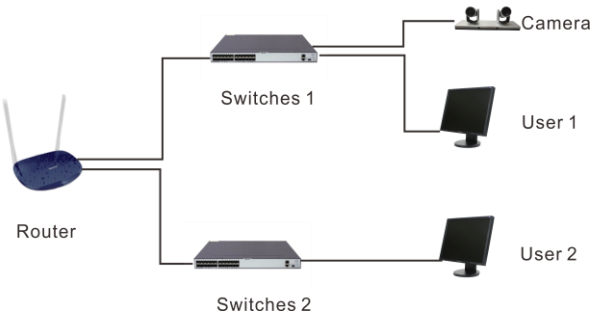
(Tracking Camera) As: Once “Network” is chosen as “Mode”, choose “Client” to actively communicate with recorder, choose “Server” to await to be communicated from recorder.

Director IP and Port: Once “Network” is chosen as “Mode”, configure recorder’s IP address and Port at these two frames.

Network Connection

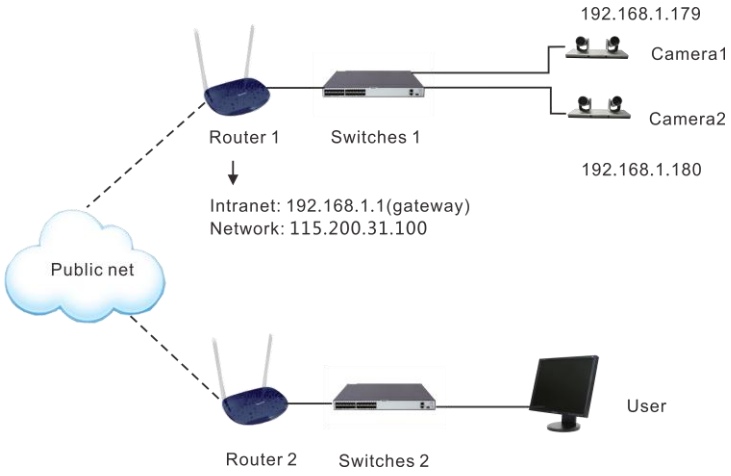
Connect the camera to network with an Ethernet cable, power on the camera.

LAN Connection



Please refer to the above diagram, user1 and user 2 are in the same router, they are considered as in the same LAN, connect the camera to the same LAN as where the PC is, and refer to below instructions as how to use the application software, then the camera can be found and connected from the online device list.

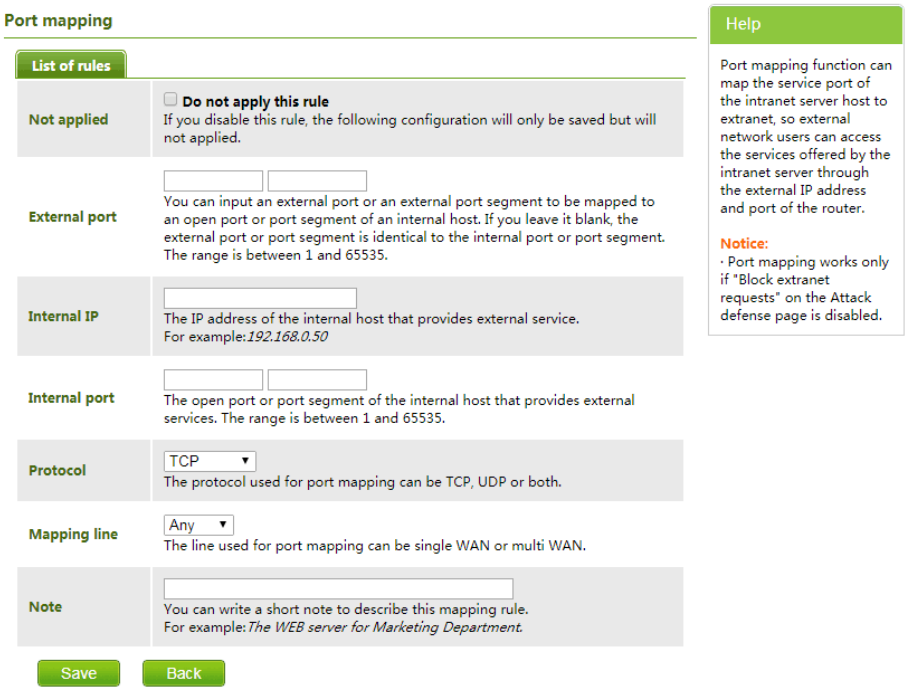
WAN Connection



Please refer to the above diagram, user and the camera are in different routers, they are considered as in a WAN; in this condition, application software iSmartCMS can not search and find the camera automatically. User can still connect after below conditions are satisfied: (1) Set camera's IP address as static IP address (2) Router of the LAN where camera is connected supports Port Mapping. (3) Router of the LAN where camera is connected has fixed public IP address. Follow below steps to connect:

1. Set camera's IP address in LAN: Connect user PC to the LAN (Router 1) where the camera is connected according to LAN connection instructions, use application software iSmartCMS to search and find the camera, then add it to manage; then set camera's IP address in the same network segment as the router 1. Camera's gateway is usually set at Router 1's LAN IP address, for example, 192.168.1.1, then camera's IP address can be set as for example 192.168.1.179 or 192.168.1.180 as long as they are in the same network segment.

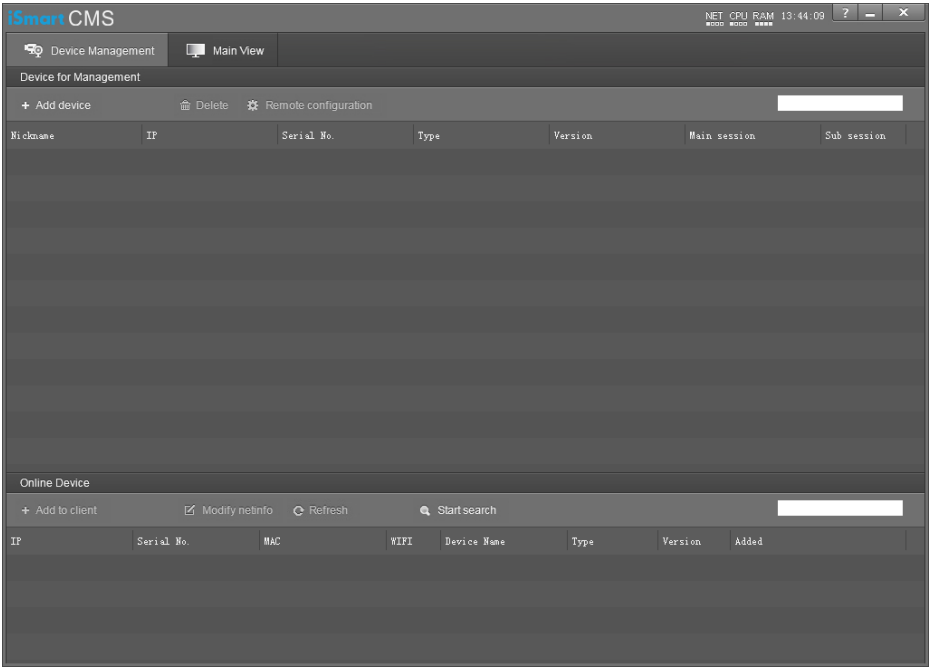
2. Route Mapping: User PC logs into router configuration menu, gets into "Port Mapping" (router management authorization may be required); refer to below picture, DO NOT tick "Do not apply this rule", from first frame under "External port", input any number from 1~65535, but preferred to be set at more than 10000 like 10200 so there will be less port conflict possibility. From "Internal IP", input the camera1's IP address 192.168.1.179, from first frame of "Internal Port", input 3478, (all cameras use this same port number). "Protocol" and "Mapping Line" can be default, from "Note", input "Camera 1's mapping port" or something to understand.



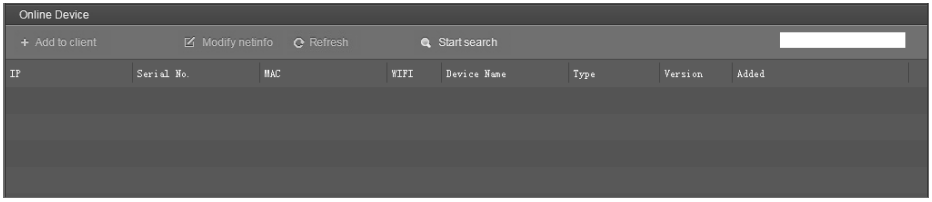
3. Access from external network: Router 1's public IP address is 115.200.31.100, for example, go through the above steps one and two, WAN users under router 2 can access camera 1 through IP address 115.200.31.100 + port 10200. Then, in WAN, the mapping of camera 1 and (IP 115.200.31.100 + port 10200) is established. Camera 2 can use another external port such as 10320, so mapping of camera 2 with (IP 115.200.31.100 + port 10320) is established. In the "Managed Device" of the client software iSmart CMS, click "+ Add", enter the IP address 115.200.31.100 and port 10200 and other information, then the camera 1 can be accessed and controlled.

Search And List The Camera

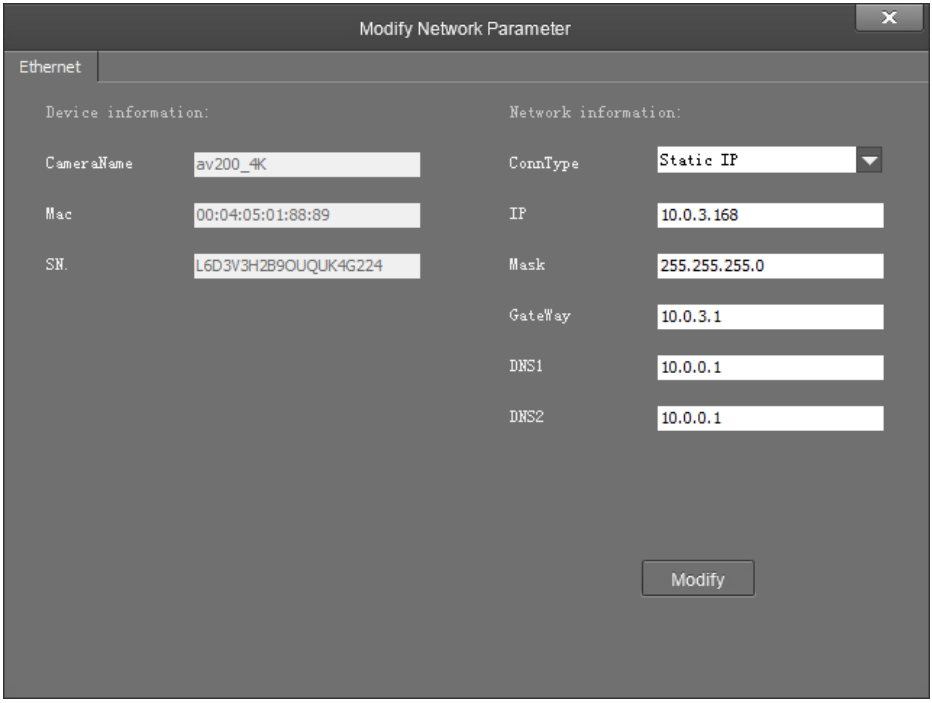
Install and open the client software in PC, enter the main interface:



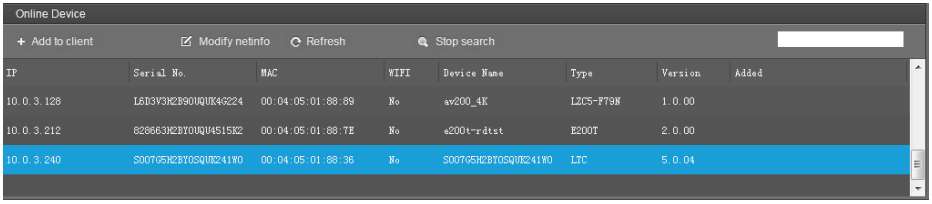
If the camera and PC are in the same LAN, click “Start Search”, then searching starts and all online devices will be listed, as the picture shown below:



To modify the device IP address, input the IP address, mask, gateway in the “Modify Network” column.



To control and preview a camera, first choose the device, modify its IP address as the IP address of the same LAN, then click “Add to Client” as the picture shown below.

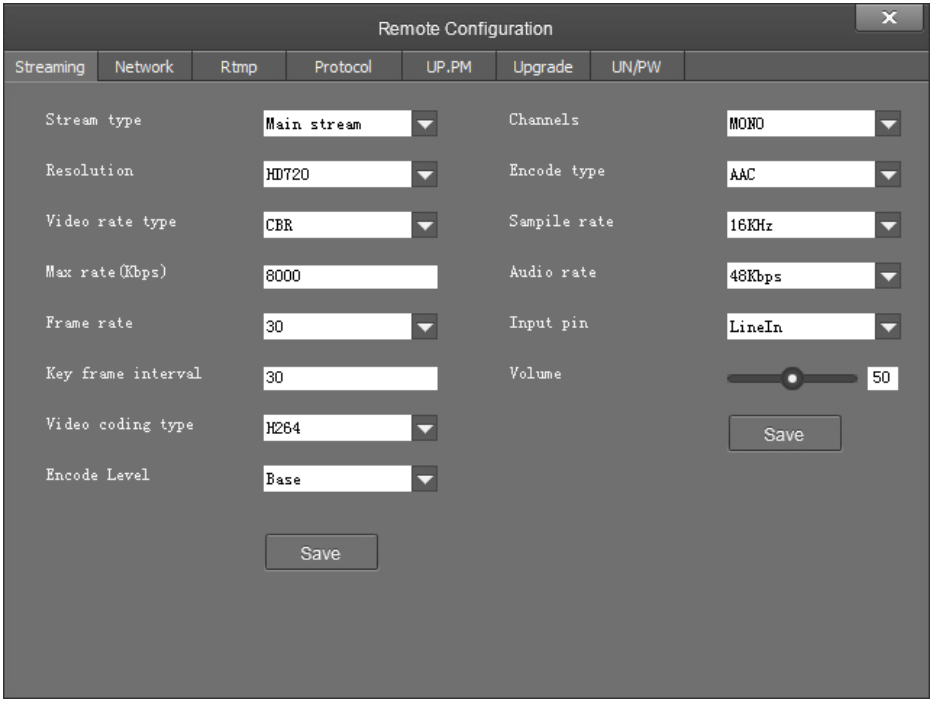


Please check that all IP addresses are in the same LAN.

Remote Configuration

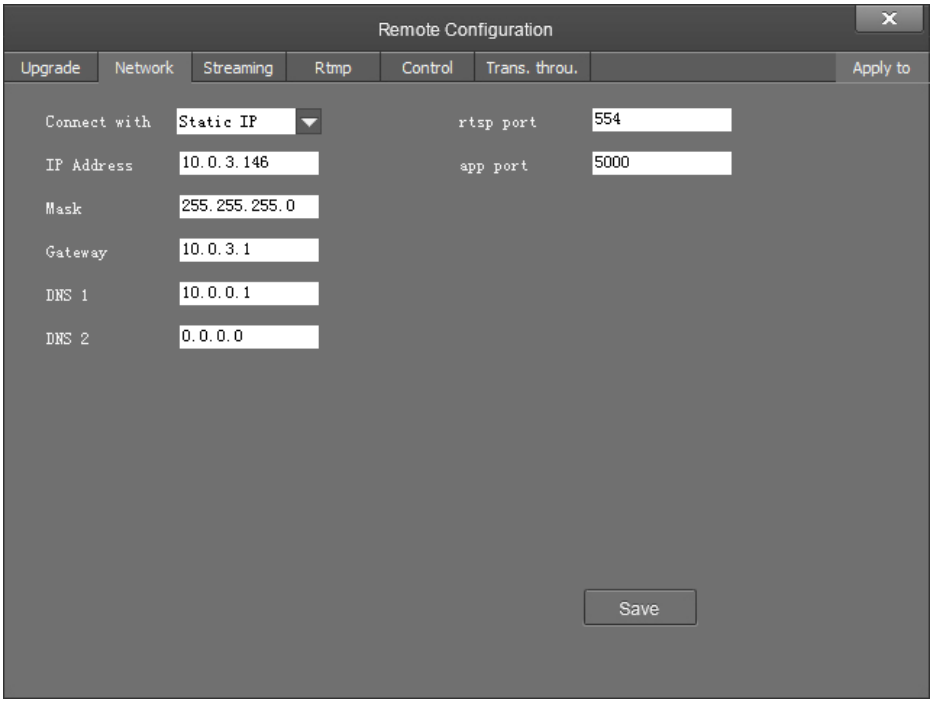
Choose the camera in the device list, click “Remote Configuration” in the column to upgrade or config the camera.

Streaming



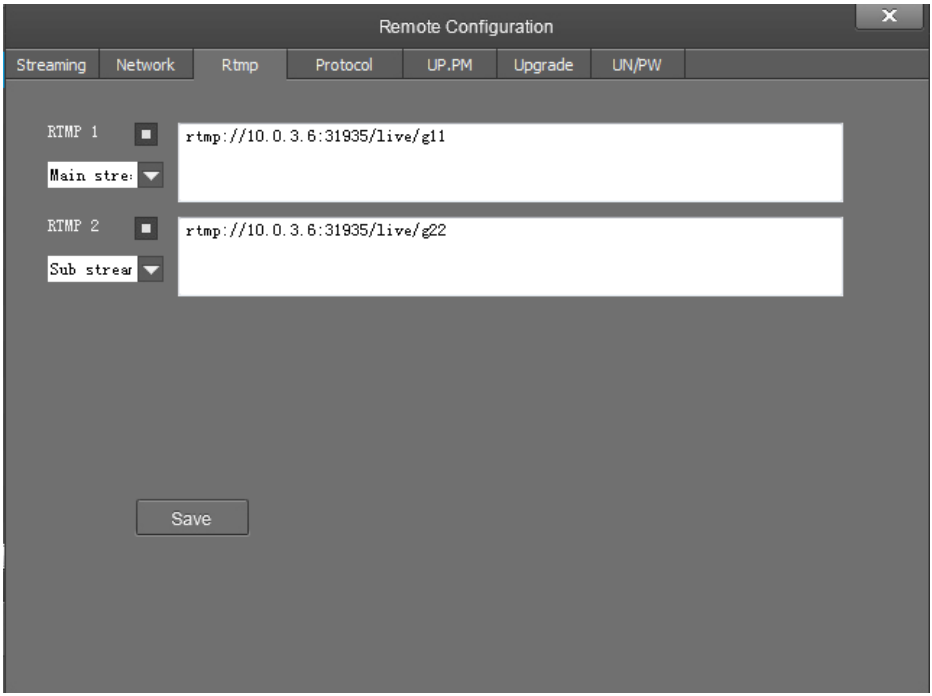
- Stream type: Set the parameters of main stream, sub stream, third stream, fourth stream.
- Resolution: Set among 1080P (1920*1080), HD720P (1280*720), D1 & QVGA (320*240), choose resolutions based on actual requirements and capability of device. The higher the resolution is, the better network requirements will be needed.
- Max rate: Configure max stream rate or adjustable stream rate.
- Frame rate: Choose from different frame per second.
- Key frame interval: Configure the number of frames between the two key frames. The larger the key frame interval is, the smaller the fluctuation of the byte will be, but the image quality is relatively poor. Vice versa, the larger the fluctuation of the byte will be, the higher the image quality will be.
- Video coding type: Choose H.264 or H.265.
- Encode level: Choose from Base, Main and High.

Network



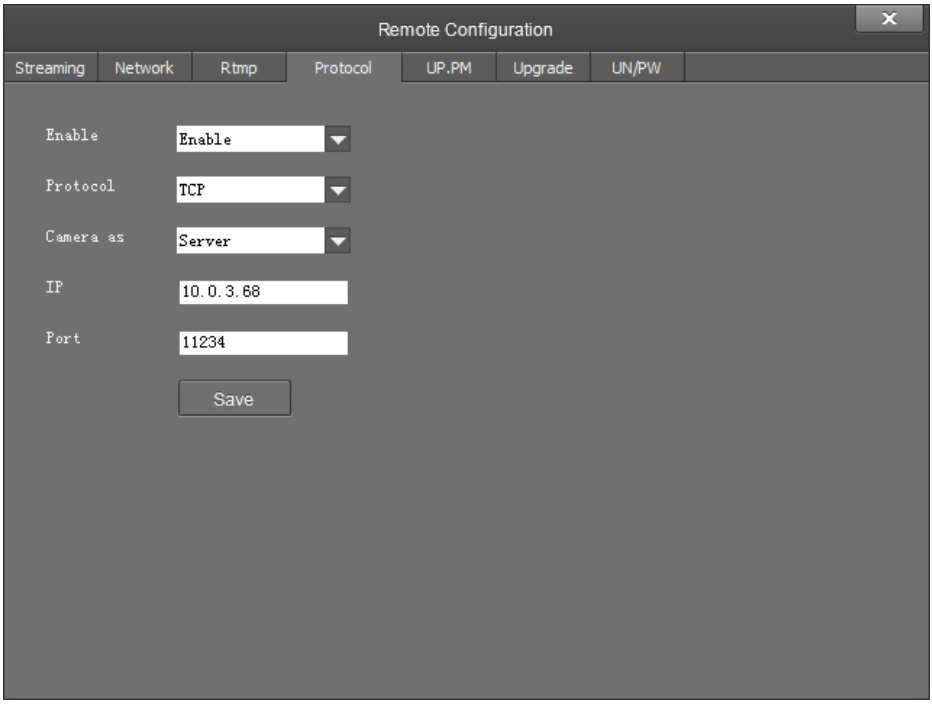
- Connect with: Please choose from Static IP or dynamic IP address.
- IP address: Input IP address for the camera.
- Mask: Input mask address for the camera.
- Gateway: Input gateway IP address.
- DNS 1: Server-prior, input DNS address for the device.
- DNS 2: It will be used in case DNS1 server is not working.
- Port: Streaming port (RTSP) and application port (SDK connection) can be configured. The range of stream ports is 3479~7999 and 554, default is 554. The range of application ports is 3479~7999, default is 5002.
- Click the “Save” button after setting is completed.
- Camera will connect to ethernet after above-mentioned operations.

RTMP



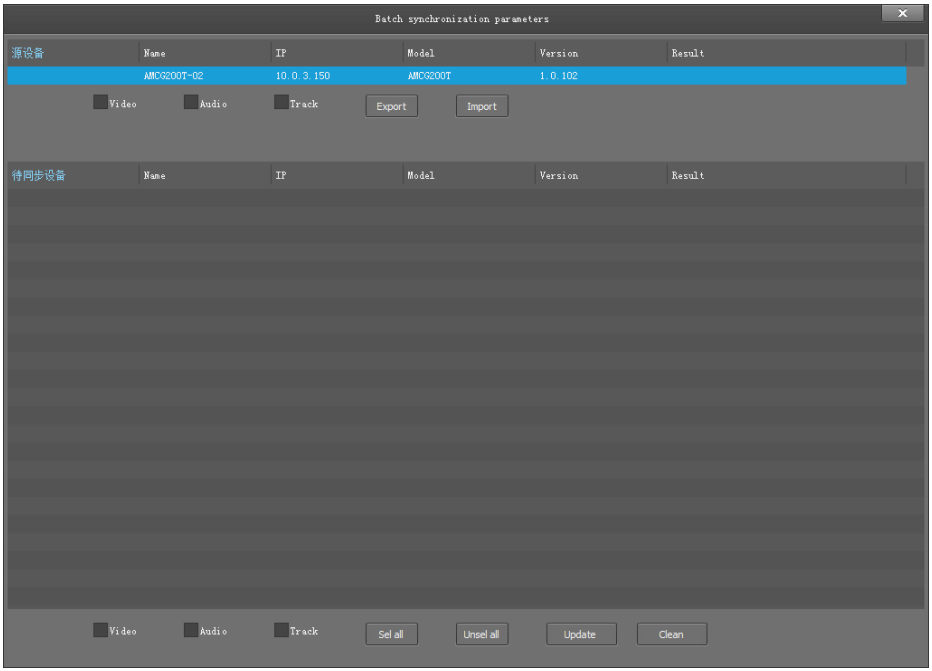
In RTMP1 and RTMP2, main stream, sub stream can be chosen to stream.

Protocol



- Enable / Disable: Enable / disable transparent transmission.
- Protocol: Choose TCP or UDP protocols.
- Camera as: Choose Client or Server.
- IP: When the camera is set as client, the IP address of the transmitted camera is needed. When the camera is set as server, the IP address can be left as black.
- Port: Choose from 1-65535 as transparent transmission port.

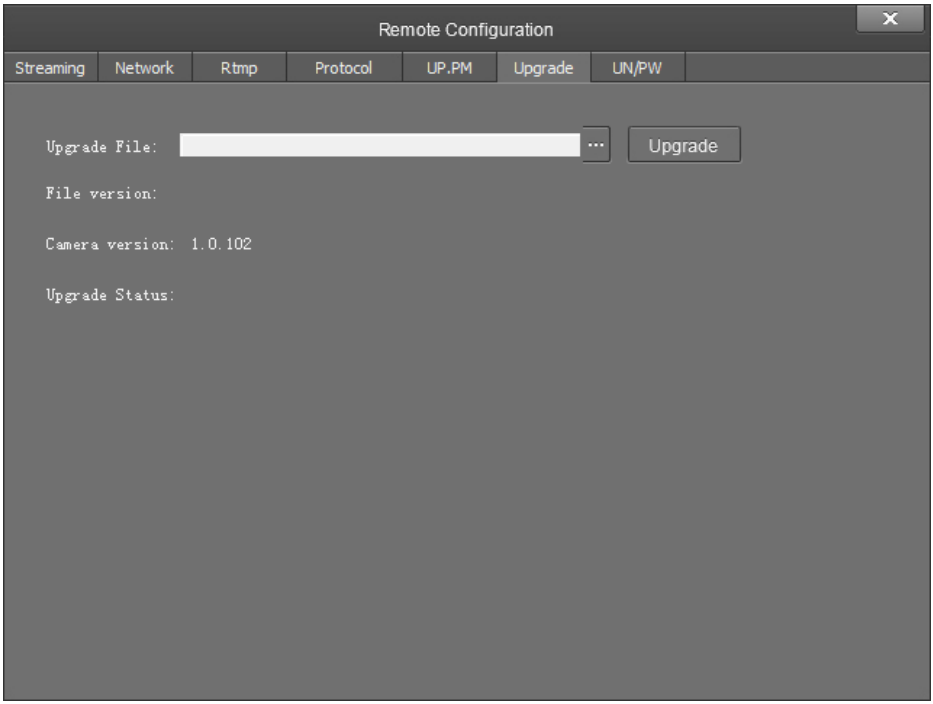
UP PM



After selecting the same model of the device to be synchronized that is currently managed and unchecked, tick any or more of the video parameters, audio parameters, and trace parameters, and when you click the sync parameters, the device that you are currently synchronizing will synchronize with the source device parameters.

- Parameter import, parameter export: Only for source device operations, you can export camera parameters to a file, or you can import parameters from a file into the camera.
- Bulk synchronization: Only for synchronous device operations.

Upgrade

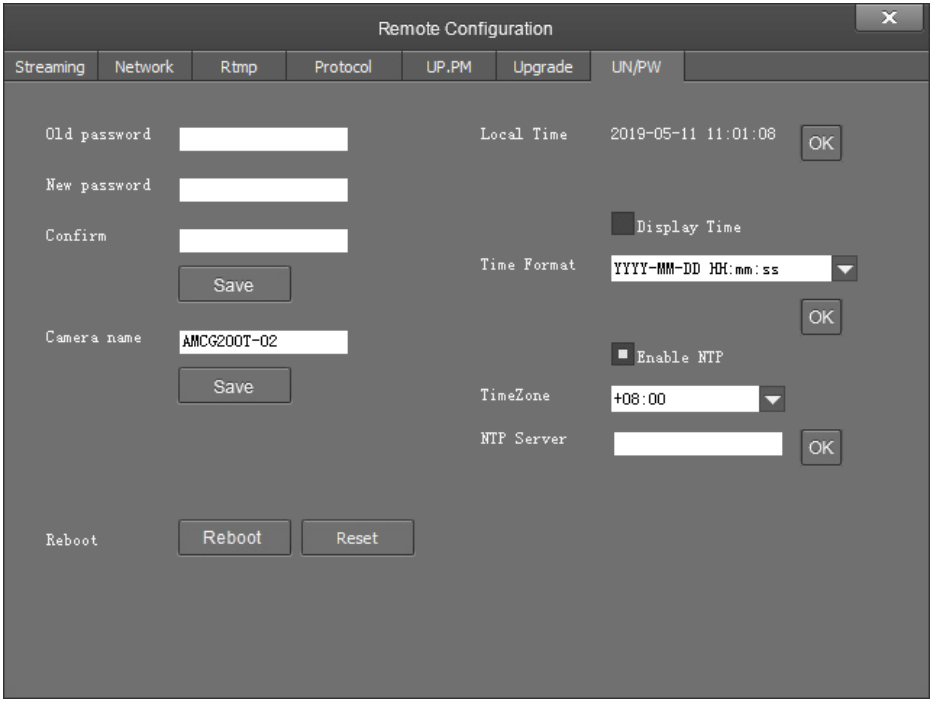


Click “Upgrade” menu to enter the main interface, as the picture shown above.

Click [...] to search and load the updating firmware, then click “Upgrade” to start upgrading. Do not power off the camera during upgrading. After upgrading is completed, camera will reboot.

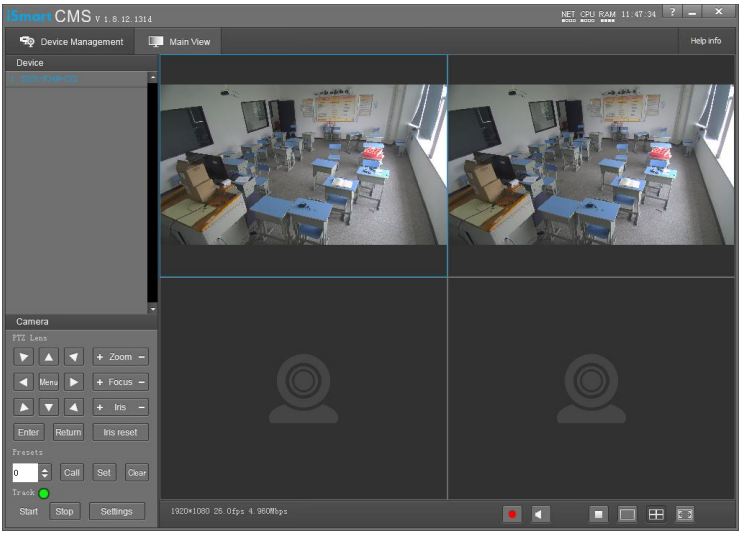
UP/PW

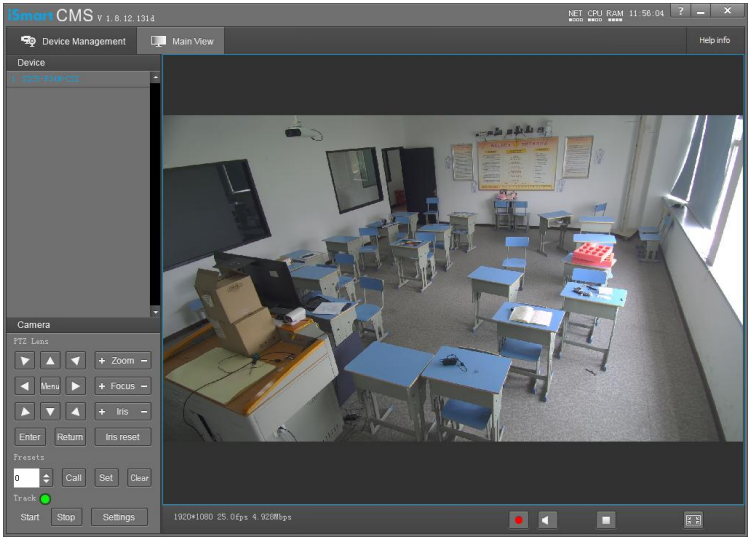
- Password setting: When a password is required, the camera can be accessed only after a correct password is input.
- Reboot: Reboot the camera.



Preview

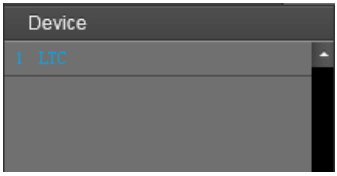
Click “Main View” to get into camera control and preview part as below.





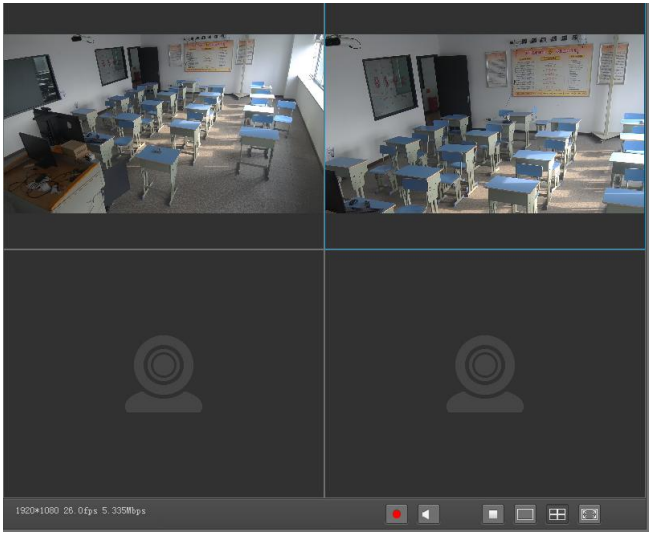
This interface includes three main parts: Device List, Device Control, Video Preview

●Device: It displays all online cameras added to “Device Management”.



- Device Control: Get control of the selected camera (camera name in blue).

- Video Preview: Double click the camera in the list, main camera stream will be displayed in the preview window; or right click the selected camera from the left column to get its main or substream video. Video preview mode can be single video or four video's, when in four video's mode, select one of the four video's then choose the bottom right icon to enlarge this selected video to a big single window.


1920*1080 26.0fps 5.335Mbps


1920*1080 25.0fps 3.848Mbps

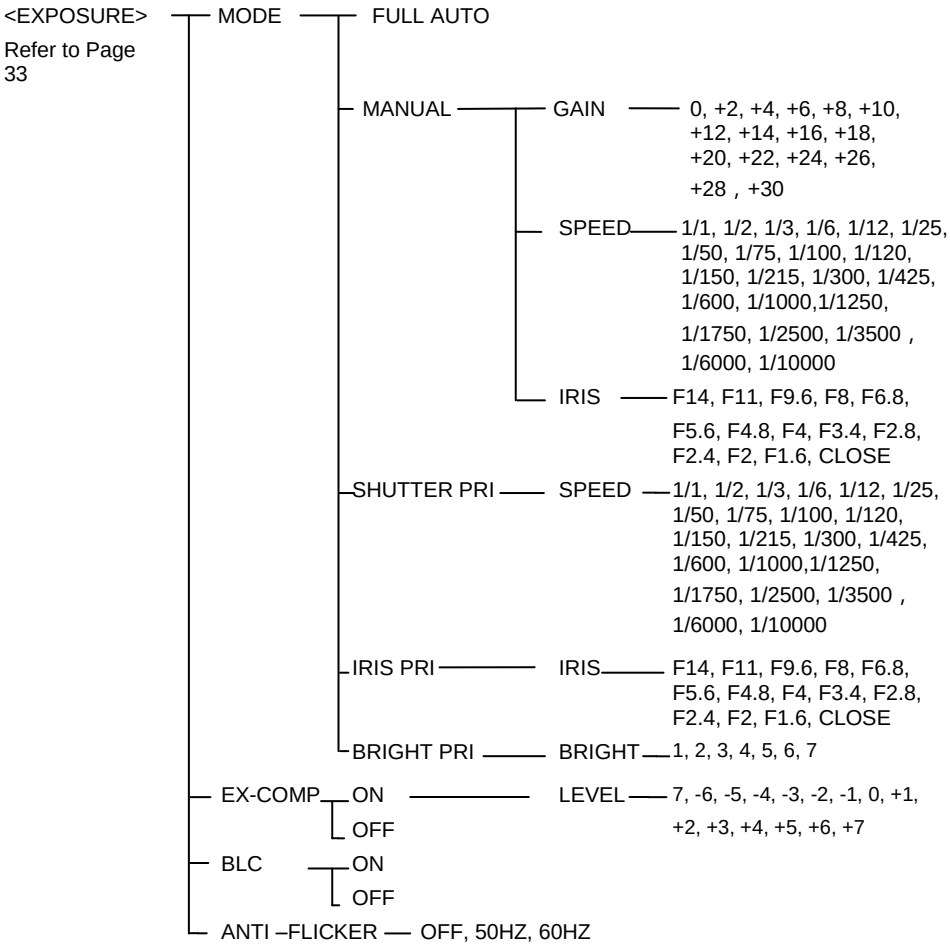
MENU SETTINGS

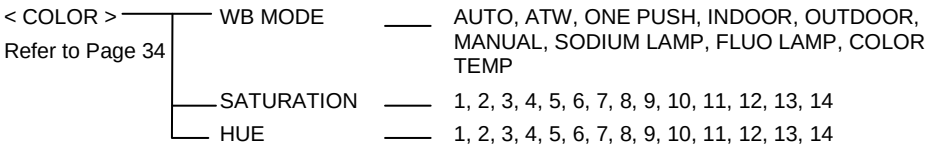
Menu Configuration

<VIDEO>

Refer Page33

- SHARPNESS — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
- BRIGHTNESS — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- CONTRAST — 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
- GAMMA MODE — 0, 1, 2, 3, 4,
- 2DNR LEVEL — 1, 2, 3, 4, 5, 6, 7 OFF
- 3DNR LEVEL — 1, 2, 3, 4, 5, 6, 7 OFF
- FV LDC LEVEL — 1, 2, 3, 4, 5 OFF


<EXPOSURE>
Refer to Page 33
MODE
FULL AUTO
MANUAL
GAIN
0, +2, +4, +6, +8, +10, +12, +14, +16, +18, +20, +22, +24, +26, +28 , +30
SPEED
1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000,1/1250, 1/1750, 1/2500, 1/3500 , 1/6000, 1/10000
IRIS
F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
SHUTTER PRI
SPEED
1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000,1/1250, 1/1750, 1/2500, 1/3500 , 1/6000, 1/10000
IRIS PRI
IRIS
F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE
BRIGHT PRI
BRIGHT
1, 2, 3, 4, 5, 6, 7
EX-COMP
ON
OFF
LEVEL
7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7
BLC
ON
OFF
ANTI –FLICKER
OFF, 50HZ, 60HZ


< COLOR >
Refer to Page 34
WB MODE
AUTO, ATW, ONE PUSH, INDOOR, OUTDOOR, MANUAL, SODIUM LAMP, FLUO LAMP, COLOR TEMP
SATURATION
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
HUE
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

<PAN TILT ZOOM> — PAN/TILT SPEED — 1, 2, 3, 4, 5, 6, 7, 8
Refer to Page 34

PTZ TRIG AF — ON, OFF
RATIO SPEED — ON, OFF

<SYSTEM> — ADDRESS — 1, 2, 3, 4, 5, 6
Refer to Page 35

PROTOCOL — VISCA
BAUD RATE — 9600
VIDEO FORMAT — 1080p60, 1080p50, 1080i60, 1080i50, 1080p30, 1080p25, 720p60, 720p50

<STATUS> — ADDRESS — 1
Refer to Page 35

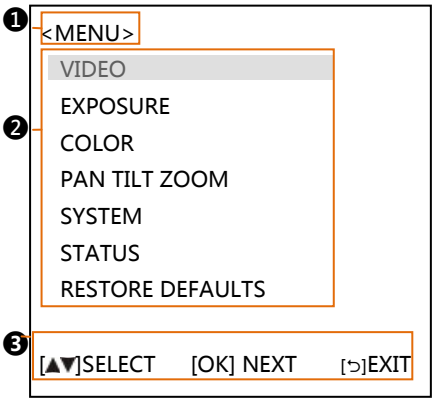
PROTOCOL — VISCA
BAUD RATE — 9600
VIDEO FORMAT — 1080p30
FIRMWARE VER.F — 1.0.1016BETA
FIRMWARE VER.P — 1.0.2016BETA
FIRMWARE VER.A — 1.1.3000

<RESTORE DEFAULTS>
Refer to Page 35

Menu Explanation

Main Menu

Press MENU button to enter / exit menu.



❶ Menu Hint

It displays currently selected menu option.

❷ Menu Options

It displays options under current menu hint.

Press ▲ or ▼ button to select among menu options, once font of options turned from white color to yellow color, it indicates the menu has been elected, press OK button to get into this menu.

❸ Prompt Message

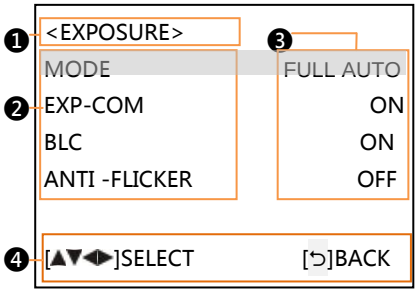
"▲▼ SELECT" indicates it is possible to press ▲ or ▼ button to select menu options.

"[OK]NEXT" indicates it is possible to press OK button to enter next level menu.

"[OK] EXIT" indicates it is possible to press OK button to exit menu.

Submenus

From main menu, navigate to select <EXPOSURE> menu, press OK to enter.



❶ Menu Hint

It displays currently selected menu option.

❷ Menu Options

It displays options under current menu hint.

Press ▲ or ▼ button to select among menu options, once font of options turned from white color to yellow color, it indicates the menu has been elected, press OK button to get into this menu.

❸ Manual Exposure

Press◄ or ► button to change value.

❹ Prompt Message

"▲▼◄► SELECT" indicates it is possible to press▲ or ▼ to select menu options, press ◄ or ► to change value

"BACK" indicates it is possible to press ⮌ to return to previous menu.

Video

VIDEO menu is used to change video value.

<VIDEO>	
➔ SHARPNESS	8
BRIGHTNESS	7
CONTRAST	2
GAMMA MODE	0
2DNR LEVEL	OFF
3DNR LEVEL	OFF
WIDE DYNAMIC	OFF
[▲▼◀▶]SELECT	[⮌]BACK

SHARPNESS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15.

BRIGHTNESS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

CONTRAST: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

GAMMA MODE: 0, 1, 2, 3, 4.

2DNR LEVEL: 1, 2, 3, 4, 5, 6, 7 OFF.

3DNR LEVEL 1, 2, 3, 4, 5, 6, 7 OFF.

WIDE DYNAMIC: 1, 2, 3, 4, 5, OFF.

Exposure

EXPOSURE menu is used to adjust exposure value.

<EXPOSURE>	
➔ MODE	FULL AUTO
EXP-COMP	ON
BLC	ON
ANTI-FLICKER	OFF
[▲▼◀▶]SELECT	[⮌]BACK

MODE:

FULL AUTO: Gain, Shutter Speed and Iris value are adjusted automatically accordingly to working environment.

MANUAL: Manually adjust Gain, Shutter Speed and Iris.

GAIN: 0, +2, +4, +6, +8, +10, +12, +14, +16, +18, +20, +22, +24, +26, +28, +29, +30.

SPEED: 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000s.

IRIS: F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE.

SHUTTER PRI: Gain and Iris value are adjusted automatically according to working environment; shutter speed value is adjustable manually.

SPEED: 1/1, 1/2, 1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300,

1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000s.

IRIS PRI: Gain and shutter speed value are adjusted automatically according to working environment; Iris value is adjustable manually.

IRIS: F14, F11, F9.6, F8, F6.8, F5.6, F4.8, F4, F3.4, F2.8, F2.4, F2, F1.6, CLOSE.

BRIGHT PRI: Manually adjust the video brightness.

BRIGHT: 1, 2, 3, 4, 5, 6, 7.

EXP-COMP: Once EXP-COMP is set as On, below level options become available -7, -6, -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5, +6, +7

+7 is the maximum compensation value for bright, -7 is the maximum compensation value for dark.

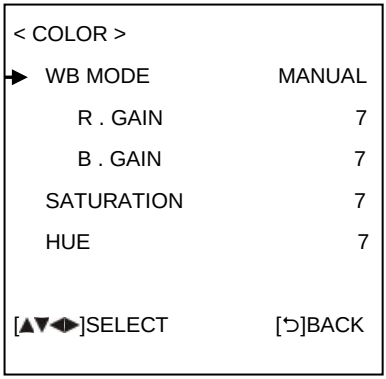
BLC: ON, OFF.

Backlight compensation (BLC) is video gain done automatically to correct the exposure of subjects that are in front of a bright light source.

ANTI-FLICKER (OFF, 50Hz, 60Hz): To avoid video flicker at power systems of different frequency.

Color

COLOR menu is used to adjust color related values. Available options:



WB MODE: AUTO, ATW (auto tracking), ONE PUSH, INDOOR, OUTDOOR, MANUAL, SODIUM LAMP, FLUO LAMP, COLOR TEMP.

"ONE PUSH": In "ONE PUSH TRIGGER" mode, aim the camera at a pure white object (say a white paper), then press OK button.

"AUTO" mode: R.GAIN, G.GAIN and B.Gain can be chosen from -7~+7.

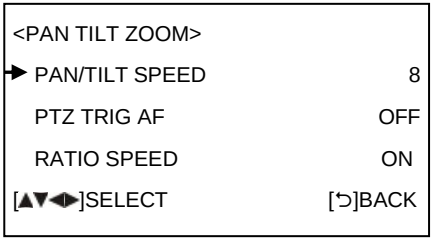
"MANUAL" mode: R.GAIN and B. GAIN value can be chosen from 0~255.

SATURATION: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

HUE: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

Pan/Tilt/Zoom

PAN/TILT/ZOOM is used to change pan/tilt/zoom value, available options:

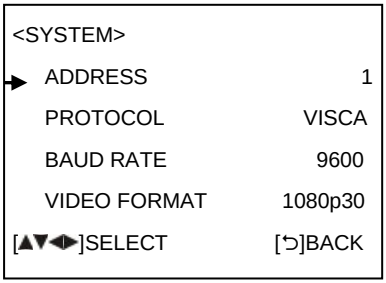


PAN/TILT SPEED: 1, 2, 3, 4, 5, 6, 7, 8 the bigger the number is, the faster the speed is.

PTZ TRIG AF: Turn ON / OFF the auto focus when the camera pans / tilts / zooms.

RATIO SPEED (ON, OFF): Set the relation of PT speed as per zoom time. When it's on, PTZ speed will be faster when zoom time is bigger.

System



ADDRESS: 1, 2, 3, 4, 5, 6.

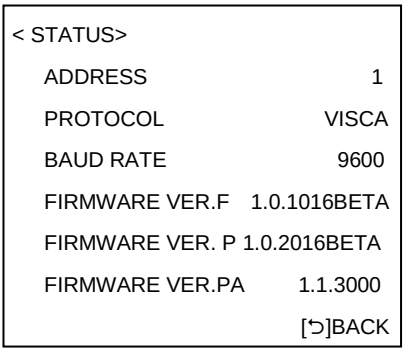
PROTOCOL: VISCA.

BAUD RATE: 9600.

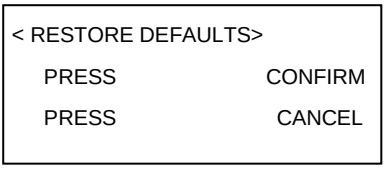
VIDEO FORMAT: 1080p60, 1080p50, 1080p30, 1080p25, 1080i60, 1080i50, 720p60, 720p50.

Status

Display information (address, protocol, baud rate, IR address, video format, mount mode, image and firmware version) of the current camera.



Restore Defaults



RESTORE DEFAULTS option is used to reset all menus to default value.
Press OK to confirm or press ⮌ to cancel and return to previous menu.

List Of Special Preset Commands

Preset No	Function
80	Turn on tracking
81	Turn off tracking
95	Turn on/off OSD
96	Clear all presets(0-64)
99	Reboot system
121	SDI or HDMI output tracking view 1
122	SDI or HDMI output tracking view 2
123	SDI or HDMI output tracking dual screen
125	Camera calibration

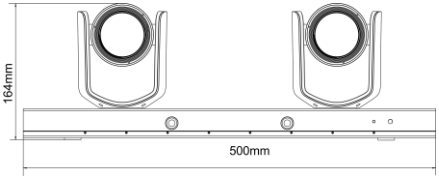
ANNEX 1 TECHNICAL SPECIFICATIONS

Tracking Camera	
Image Sensor	1/2.8" CMOS, 2.14 megapixel
Focal Lens	f=3.9mm-46.8mm
Iris	F1.6-F2.8
Optical Zoom	12x
Digital Zoom	12x
Horizontal Viewing Angle	72.5°-6.3°
Focus System	Auto, Manual, PTZ Trigger, One Push Trigger
Exposure Control	Auto, Manual, Shutter Priority, Iris Priority
Min. Illumination	1.0Lux @ (F1.8, AGC ON)
Shutter Speed	1/1 to 1/10,000s
Gain	Auto /Manual
White Balance	Auto, Indoor, Outdoor, One Push, Manual, Auto Tracking, Color Temp
S/N	≥50dB
Menu	English
Full-View Camera	
Image Sensor	1/2.8" CMOS
Effective Pixels	2.14MP
Focus	Manual
Exposure Control	Auto
White Balance	Auto
Focal distance	2.4mm
Viewing Angle	Horizontal: 86°, Vertical: 52°
PTZ	
Pan Angle	-90°~+90°
Tilt Angle	-30°~+90°
Pan Speed	0.1°~120°/S
Tilt Speed	0.1°~90°/S
Preset Number	256
Protocol	VISCA
Network	RJ45 (100M, self-adaptive)
HD Video	
Video Output	3G-SDI, HDMI
Video Format	1080p60, 1080i60, 1080p30, 720p60 1080p50, 1080i50, 1080p25, 720p50
Audio Input	2 x LINE IN, including one channel with EC
Audio Output	1 x LINE OUT
Control Interface	RS-232
NETWORK	
Resolution	Max Support 1920*1080@60fps

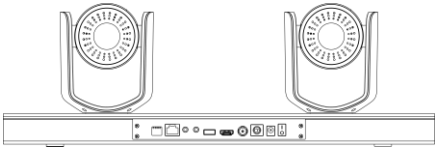
Image Compression	H.264/H.265
Audio Compression	AAC
Protocols	ONVIF, RTSP, RTMP, HTTP, TCP, UDP, RTP
Dual Stream	Support
General	
Address	1-6
Power	DC12V
Power Consumption	<24W
Operating Temperature	0°C~+40°C
Storage Temperature	-20°C~+60°C
Dimensions （W×H×D）	500mm×137mm×164mm
Body color	Grey

ANNEX 2 SIZE AND DIMENSION

Front

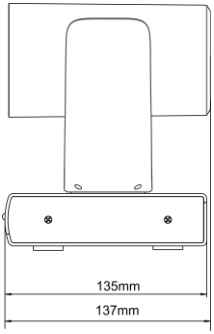


Rear

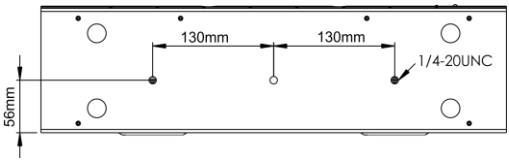


Top

Side



Bottom



TROUBLESHOOTING

Problem	Possible Cause	Solution
No action or image after powered on	Power supply failure	Check power supply
	Power adapter damaged	Replace power adapter
	Power cable connection got loosen	Check & reconnect
No self-testing after powered on, or with motor noise	Power cable is too long	Use a shorter cable
	Power adapter damaged	Replace power adapter
	Mechanical failure	Repair
Not controllable from remote controller	Low battery of remote controller	Change battery for remote controller
	Exceed remote control distance	Control within distance of 8M
After power on, self-test successfully, but not controllable	Wrong address / protocol / baud rate	Check & set again
	Wrong connection or open circuit of RS-232 cable	Check & reconnect
Video loss when pans / tilts / zooms	Power cable is too long	Use a shorter cable
	Power adapter damaged	Replace power adapter
	Video cable not properly connected	Replace with a good video cable
Video captured after connected to digital video interface of a capture device is not good as the video captured after connected directly analog video interface of the capture device	Different video capture devices have different video capturing performance, image quality maybe worse after it has been converted from analog to digital	Consult video capture device supplier for more information

The user manual is only for a reference, if there are any changes or differences, please ask for the latest version from your supplier

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